



BASES, LINERS, AND DENTIN BONDING AGENTS



PURPOSE OF INTERMEDIATE MATERIALS

- ◆ SEAL DENTINAL TUBULES
- ◆ REDUCE MICROLEAKAGE
- ◆ ENHANCE RETENTION
- ◆ ENABLE (STIMULATE ?) PULP REPAIR
- ◆ REDUCE THERMAL SHOCK

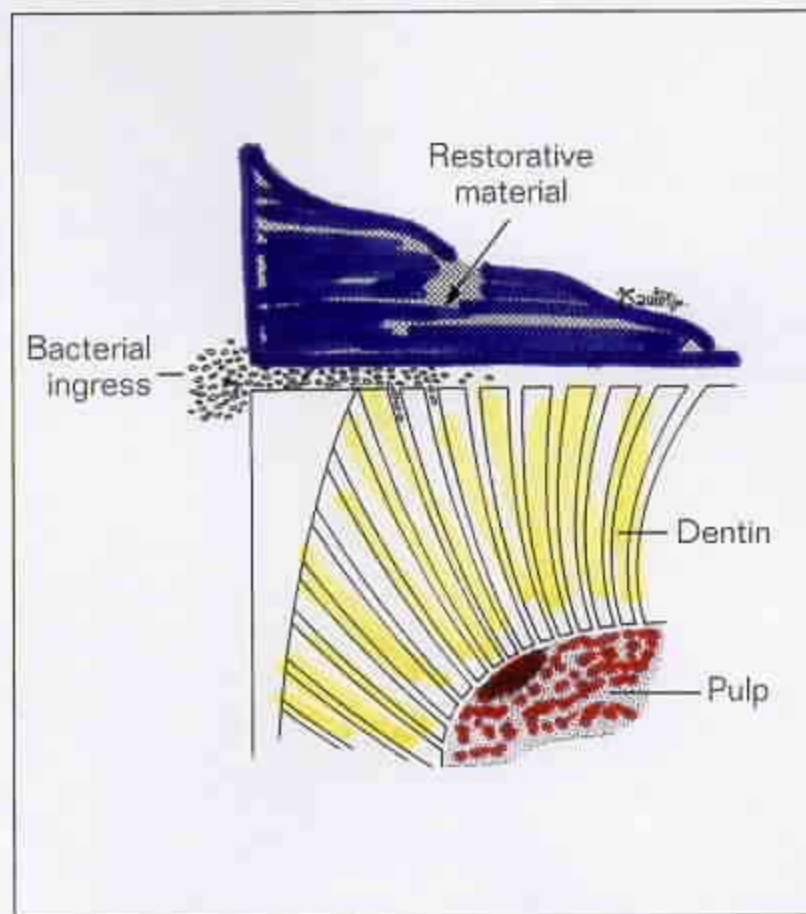


Fig 5-1a Bacteria will penetrate the marginal gap and dentinal tubules from the saliva, which may cause pulpal irritation, pulpal necrosis, or recurrent caries.

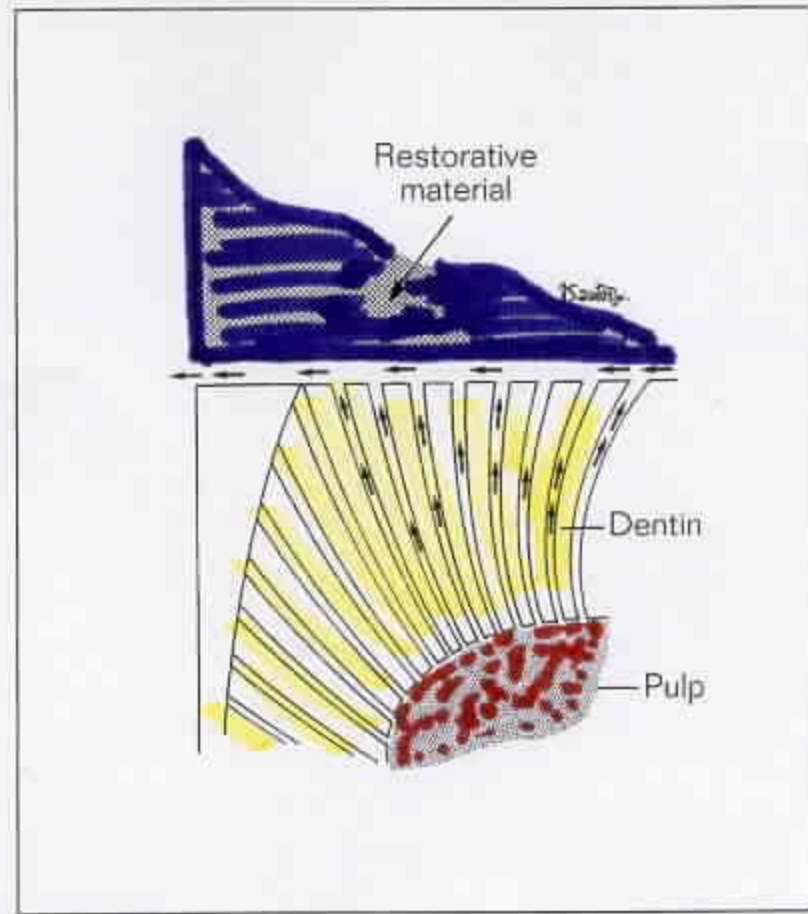


Fig 5-1b If a restoration is not well sealed, fluid flows out of the dentinal tubules and into the space between the restorative material and the tooth surface (*arrows*). A stimulus such as hot or cold causes a change in the flow rate, which is interpreted by mechanoreceptors as painful.



COPAL VARNISH

- ◆ BARRIER TO PASSAGE OF BACTERIA AND PRODUCTS INTO DENTIN TUBES
- ◆ VERY THIN; NO THERMAL INSULATION
- ◆ TEMP REDUCTION IN MICROLEAKAGE
- ◆ PROBLEM WITH HIGH COPPER AM
- ◆ BETTER THAN NOTHING



TECHNIQUE: COPAL VARNISH

- ◆ DRY PREPARATION
- ◆ APPLY THIN COAT TO DENTIN
- ◆ APPLY SECOND THIN COAT TO DENTIN
- ◆ CONDENSE AMALGAM
- ◆ COPAL VARNISH NOT USED WITH OTHER RESTORATIVE MATERIALS



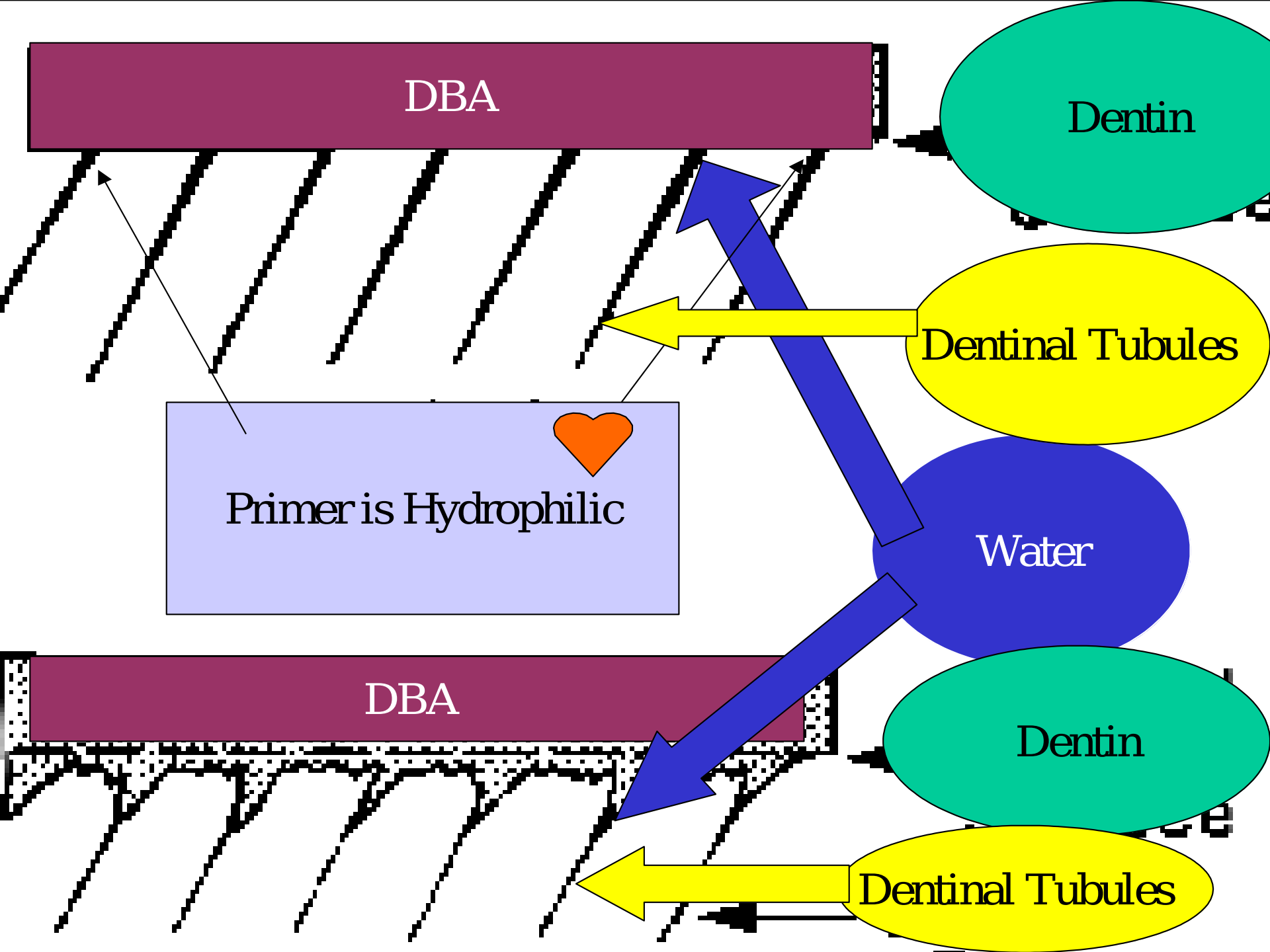
ADHESIVE SEALERS (DBA)

- ◆ RESIN COMPOSITE:
 - MANDATORY BECAUSE OF POLYMERIZATION SHRINKAGE; IMPROVES RETENTION AND REDUCES MICROLEAKAGE
- ◆ AMALGAM: PROBLEMS, BUT PROBABLY BETTER THAN COPAL VARNISH
 - IMPROVES RETENTION AND REDUCES MICROLEAKAGE



Dentinal Bonding Agents

- ◆ Bonding Systems which improve retention of composite or amalgam to tooth structure, reduce microleakage, and minimize post-operative sensitivity.
- ◆ Must be able to bond to both enamel and dentin.



Dentinal Bonding Agents

- ◆ There are several types of bonding systems, making it difficult to remember various directions for use.
- ◆ Examples of DBA used in the clinic:
 - All-Bond
 - Optibond
 - One Step





All-Bond 2

◆ For Composites:

- Etch for 15 seconds then rinse.
- Apply 5 coats of mixed A+B Primers, then air dry.
- Apply D/E Resin then light cure for 10 seconds.
- Apply



◆ For Amalgams:

- Etch for 15 seconds then rinse.
- Apply 5 coats of mixed A+B Primers, then air dry.
- Apply mixed Pre-Bond and D/E Resin.

alagam





TECHNIQUE FOR DBA

- ◆ EACH MATERIAL: TECHNIQUE SENSITIVE AND SPECIFIC
- ◆ READ THE INSTRUCTIONS
- ◆ FOLLOW TO THE LETTER
- ◆ IT MAKES A DIFFERENCE
- ◆ LACK OF VISUAL CLUE
- ◆ GOLDEN RULE
- ◆ PRIMARY CAUSE OF REPLACEMENT ?



CALCIUM HYDROXIDE

- ◆ CaOH (DYCAL)
- ◆ PLACE SPARINGLY ON DIRECT AND INDIRECT PULP CAPS
- ◆ COVER WITH RMGI CEMENT / BASE (VITREBOND)
- ◆ STIMULATES / ENABLES DENTIN REPAIR AND PULP SURVIVAL IN DEEP CAVITIES



RMGI LINERS / BASES

- ◆ NOT FOR NEAR PULP EXPOSURE
- ◆ USE TO COVER IPC DRESSING (DYCAL)
- ◆ VERY GOOD THERMAL INSULATOR
- ◆ BONDS WEAKLY TO DENTIN
- ◆ WORKS WELL UNDER AMAL AND COMPOSITE, BUT MAY AFFECT COLOR



RECOMMENDED:

- ◆ DEEP CARIOUS LESIONS: DYCAL PLACED SPARINGLY, COVERED WITH RMGI
- ◆ AMALGAM: SMALL TO MODERATE SIZE / EXTENT-RMGI ; ADHESIVE SEALER OPTIONAL
- ◆ AMALGAM: LARGE; RMGI LINER AND ADHESIVE SEALER



RECOMMENDED

◆ RESIN COMPOSITE:

- MANDATORY USE OF ADHESIVE LINER
- RMGI LINER PREFERABLE, BUT MAY AFFECT ESTHETICS

